

ENVIRONMENTAL ASSESSMENT FOR

OCEANVIEW VENTURES

K A I A K A P O I N T

HALEIWA, OAHU

ENVIRONMENTAL COMMUNICATIONS, INC.

401 Kamakee Street
Honolulu, Hawaii 96814
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INTRODUCTION

This Environmental Assessment was prepared at the request of Oceanview Ventures for the Kaiaka Point condominium development project. The project has been the subject of discussion, and opposition to the proposed development has been, for the most part, based on intended use of the project site: Development of condominium apartment units. The purpose of the Assessment is to accurately depict those aspects of potential environmental degradation, both physical and socio-economic. As a disclosure document, we will not attempt to justify the project's acceptability, but will limit ourselves to identifying specific problem areas that can develop if this project is implemented. Also included are alternatives to problems which can resolve the pollution potential; the decision to select and implement alternatives offered will be done by the developer whose decision will be based on compliance with applicable Federal, State and County rules and regulations, and economic constraints.

All material developed and used in this document was prepared specifically for Oceanview Ventures, and use of the data compiled is prohibited unless express consent of Oceanview Ventures has been obtained.

Contributing to the scientific and technical portions of the assessment were:

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- . Chapman, Phillips, Brandt & Associates
- . Park Engineering

The assessment represents the total efforts of the above listed individuals and firms, and acknowledgement of their contributions is greatly appreciated.

I

A. DESCRIPTION OF KAIKA POINT AREA

The existing 53 acre parcel is characterized by a relatively flat terrain that varies from an elevation of approximately 5 to 12 feet. The 5-foot level lies adjacent to Haleiwa Road while the 12-foot level is reached at a bench mark on the northernmost reach of Kaiaka Point, as well as in the area to the northeast, which borders the existing single-family residential dwellings.

Kaiaka Point receives an average precipitation of less than 30 inches per year, as shown in Figure 2.^{1,2} The site of the proposed project is presently not in use; however, portions of it were previously used for diversified agriculture.

Approximately one-half of the land is covered by a growth of haole koa, with an assortment of grasses growing in the remaining land area. The most prominent flora feature on the site is the large ironwood trees which approach 100 feet in height and are located slightly inland from the tip of Kaiaka Point, along the Waialua Bay side, generally forming a semi-circle around a large grassed area occupying approximately one-third the project area behind Waialua Elementary School. A few other scattered trees, primarily on the Waialua Bay side of the project, are also present. These include monkey pod, banyan, false kamani, coconut, and hala trees. Rodents and assorted small birds were also observed in the area.

The geologic formations underlying Kaiaka Point and the surrounding area, as shown in Figure 2, are characterized by caprock made up of marine and/or alluvial sediments. Although the caprock

is somewhat permeable, it does tend to inhibit the seaward flow of fresh water into the ocean. Accordingly, fresh water in this area generally passes into the caprock or emerges as springs along or within the streams discharging into Kaiaka and Waialua Bays.^{3,4}

Because the Haleiwa-Waialua caprock is slightly permeable, wells near the coastline are generally brackish exhibiting moderate rates of ground water movement. In 1966 the Waialua Sugar Company⁵ constructed a series of four wells, 6 feet in diameter, which were placed in a north-south alignment perpendicular to the shoreline and extending approximately 4,200 feet inland. Recent pumping substantiates this movement of fresh water seaward into the caprock, as evidenced by a sharp increase in chlorides (greater than 13,000 mg/l) after four months of pumping, followed by a decrease to near pre-pumping levels (250-1000 mg/l) after cessation of pumping. This decrease is generally attributed to the movement of freshwater towards the sea.

Within the project area, Ewa silty clay loam (EmA) and Jaucus sand (JaC) constitute the major soil types, with minor occurrences of Mokuleia loam (Ms) and Waialua silty clay (WkA).⁶ All four soils are similar (Table I), with respect to runoff (slow), erosion hazard (slight), permeability (moderate to rapid), corrosivity (low to moderate), mean annual soil temperature (73-75°F), and usage (sugar cane, truck crops, pasture, and urban development). Unless irrigated, all four soils demonstrate severe limitations that further restrict the choice of crops that may be cultivated.

Generally speaking, there is little runoff from the project site into the adjacent waters due to relatively high permeability of predominant soils, the nearly level slope of Kaiaka Point, and the low annual rainfall in the Haleiwa-Waialua area.

On the Kaena Point side of Kaiaka Point lies a coastal plain estuary and Kaiaka Bay, the receptacle for a drainage area saddled between two major mountain ranges on Oahu, the Koolau and the Waianae. The Kaiaka Bay watershed originates in the rainy crest of the Koolau range and passes through forest lands, pineapple and sugar cane fields, and urban areas on the coastal plain.

The major streams discharging directly into Kaiaka Bay are a combination of Kiikii Stream and Paukauila Stream which form a confluence before entering into Kaiaka Bay. Kiikii Stream, on the Kaena Point side is approximately one mile long and 150 feet wide. It is formed by the confluence of Kaukonahua and Poamoho Streams. Paukauila Stream, on the Waialua Bay side is formed by the confluence of Opaepala and Helemanohi Streams. Both Kiikii and Paukauila Streams are estuarine for roughly a mile inland from their confluence before entering Kaiaka Bay. The total drainage area is approximately 54,000 acres with 38,300 acres being greater than 8 percent slope, and 15,700 acres being less than 8 percent slope.⁷

The four streams which drain the area (Kaukonahua, Poamoho, Opaepala, and Helemanohi) are perennial in the headwaters; however, the normal flows are diverted for irrigation, and consequently flow is practically non-existent during dry weather.^{8, 9, 10}

A beach, located at the head of Kaiaka Bay, is apparently used very little for swimming, primarily because it is often too turbid as a result of the discharge of flood waters,⁸ but also because at several points of access "no trespassing" signs are posted. Another important reason, however, is the easy accessibility of other nearby swimming beaches. Fishing in Kaiaka Bay and its estuarine tributaries is very good,¹⁰ as evidenced by the number of people fishing during the weekends from the Cane Haul Bridge over the confluence of Kiikii and Paukauila Streams.

A study of the currents in Kaiaka Bay by Belt Collins & Associates,¹¹ on two days in October and December of 1961, indicated that the current is greatly affected by the wind and is apparently set continuously seaward if sufficient stream flow is available. During that study, one measurement on a rising tide outside the Bay indicated that the current was southwestward at a velocity of 0.1 knot. The prevailing winds are from the northeast.

Current movement studies and nearshore underwater geological features around the Hawaiian Islands, as reported by Moberly et al (1963)¹³ and Laevastu, Avery & Cox (1964)¹⁴ indicate a surface current on the north coast of Oahu that is set generally westward.

An extensive one-year study of the offshore waters of Kaiaka and Waialua Bays was conducted in 1965-66 by R. M. Towill Corporation¹² to determine the most feasible site for a deep ocean outfall for the municipal treated waste water effluent from the Waialua-Haleiwa area. The conclusion of this study was that the ocean

outfall should be located in the Kaiaka submarine channel (Fig. 3) which is more than 90' deep and which has a prevailing seaward flowing rip current.

Water quality samples were reported in 1962 in the Belt Collins study¹¹ at six different sampling sites in Kaiaka Bay for three days in November and December 1961. The resultant data, together with the data on currents, led the authors of a report on "Coastal Currents and Sewage Disposal in the Hawaiian Islands"¹⁴ to conclude that "the currents in Kaiaka Bay are insufficient to prevent stagnation, as indicated by low oxygen content and high biochemical oxygen demand." The Belt Collins study¹¹ has also previously commented, "The low current velocities, particularly in calm weather, result in a highly limited flushing action from the bay with consequent stagnation, siltation, and pollution cocentration." Escherichia coli which may be regarded as forming the major portion of what is presently measured as fecal coliforms, ranged 375 to 90,000 MPN/100 ml.

Three water quality samples collected on the Waialua Bay side of Kaiaka Bay, slightly offshore of the mouth of the confluence of Kiikii and Paukauila Streams, for the period of August 1965 to July 1966, are reported in the R. M. Towill study.¹² The water quality parameters during this period ranged from: D.O., 6.7 to 7.5 mg/l; BOD, 0.27 to 1.09 mg/l; pH, 7.55 to 7.68 mg/l; NH₃-N, 0.008 to 0.10 mg/l; NO₃-N, 0.001 to 0.012 mg/l; and PO₄-P, 0.014 to 0.037 mg/l. These samples in themselves do not indicate a high degree of stagnation. However, they only represent three samples during an eleven month period at one location.

A limited number of chemical and physical parameters for ten locations during three separate sampling dates in May, 1972, in the estuarine portion of Kiikii and Paukauila Streams, are reported by Sunn, Low, Tom and Hara, Inc.¹⁰ The report was prepared in 1972 as a draft environmental impact statement for Waialua Sugar Company who, in turn, was applying for a zone of mixing permit in order to continue to discharge condenser cooling waters at the rate of 14 mgd into Kiikii Stream. The cooling water discharge into Kiikii Stream during sugar mill operations commenced in the middle of 1967. The sugar mill was subsequently (Oct. 27, 1972) issued a variance to continue to discharge condenser cooling water into Kiikii Stream.

The State Department of Health has been conducting a sampling program for fecal and total coliforms at Kaiaka Bay on a schedule of approximately twice a month since January 1971. The sampling point is near shore, approximately 20 yards from the mouth of the confluence of Kiikii and Paukauila Streams on the Waialua Bay side of Kaiaka Bay.¹⁵ From the initiation of the study in January 1970 until April 1973, the total coliforms have varied from 4 to 240,000 MPN/100 ml and the fecal coliforms ranged from 0 to 46,000 MPN/100 ml. In a high percentage of cases the sample collectors reported varying degrees of turbid water at the sample site.

Several extreme stream flows, labeled floods by the U. S. Geological Survey, have occurred in recent years on the Poamoho and Helemano Streams, both tributaries to Kaiaka Bay.¹⁶

The low lying areas around Haleiwa are in a tsunami zone and a number have been recorded in the area. The greatest damage at Kaiaka Point was in 1957 when sea water advanced as far as 3,000 feet inland. During this tsunami, eleven houses on Kaiaka Point were reported to have been swept off their foundations. Flood insurance rates in the vicinity of Haleiwa, including Kaiaka Point, indicate a 1 percent (100-year tsunami) annual water elevation probability of 17 feet above mean sea level.¹⁷

B.

DESCRIPTION OF THE PROPOSED PROJECT

The proposed project site is in Haleiwa, District of Waialua, Oahu, Hawaii and is further identified as Tax Map Key 6-6-07:7 & 8; 6-6-13:14, 15, 16, 19 & 20 6-6-14: portion of 7. The area outlined constitutes the approximate 53 acres in question. Subject land has an irregular shape and rises to an elevation of 5' adjacent to Haleiwa Road, to 12' along the north coast adjacent to Kaiaka Beach lots. This slight slope occurs on approximately one half of the property on the Kahuku side. The remaining one half of the property on the Kaena Point side adjacent to Kaiaka Bay is relatively level. The property has approximately 3,325 linear feet of shoreline frontage and 322 linear feet of beach frontage. The beach front lies on the Kahuku side of the property at the highest point of elevation. This beach also fronts on Class AA waters which extend from Puaena Point to Kaiaka Point.* The shoreline frontage lies on the Kaena Point side of the property and forms the peninsula adjacent to Kaiaka Bay. The shoreline fronts on Class A Waters.** The mauka side of the site is bounded by Haleiwa Elementary School and Haleiwa Road which is the main access road.

1. Present use of property - subject property is presently vacant
2. Existing General Plan Uses - Park Use, Residential Use, and Commercial Use

*Public Health Regulations, Department of Health, State of Hawaii: Chapter 37-A Water Quality Standards, Section 5, "Classification and Establishment of Water Areas", subsection A, 1(a), page 5.

**Ibid

3. Existing State Land Use Districts - Urban
4. Ownership - Subject Property is owned by Oceanview Ventures
5. Development Plan - The developer is proposing to develop a portion of the 53-acre site for medium density apartment use with the balance to be dedicated for public park use. These public park sites constitute approximately 15 acres and are indicated on the adjoining map as follows:

Parcel A - 5.9 acres \pm active recreation park

Parcel B - 38 acres \pm medium density apartments

Parcel C - 9.1 acres \pm Park for water oriented activities

The apartment designated site will constitute 11% covered space of the 38 acres developed and the existing ironwood trees which are one of the outstanding visual amenities of the site to be retained. In addition, the developer will augment the existing ironwood tree grove with additional landscaping to more effectively blend the medium density apartment buildings into the existing tree line, thus cutting down the sharpness of the structural skyline. The present plan tentatively calls for 756 apartment units in seven story buildings with a recreation center. Parking will be on grade adjacent to the buildings. These apartment units will be mixed as follows:

- a. One bedroom unit, 15%, 800 sq ft
- b. Two bedroom unit, 70%, 900 sq ft
- c. Three bedroom unit, 15% 1100 sq ft

At the present time there is no development schedule programmed since approvals for the application to amend the General Plan are pending.

C.

PROPOSED PROJECT'S OBJECTIVES

The developer has determined, through examination of the current market, that there is an acute shortage of residential units within the reach of moderate income families on Oahu. This shortage is more pronounced in the Waialua District where a need for general housing in the next 15 years is summarized as follows:

<u>Year</u>	<u>Units</u>
1970 - 75	1,130
1975 - 80	1,015
1980-- 85	870
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Total	3,015

To accommodate the indicated need for 3,015 units on R-6 zoning, the land required would be approximately 554 acres. An accretion of 300 additional square feet per lot would occur when one considers the average lot size of 5,000 sq ft, roads and circulation, drainage and other easement requirements, parks and recreational areas, allowances of odd shaped lots and topographical limitations.

The Planning Department, City & County of Honolulu, report on Vacant Land on Oahu issued in June 1971 examined the availability of multi-family residential use lands in the Waialua District. This report on page 16 indicated that other than a Bishop Estate parcel of 100 acres intended for resort use, there were little, if any, large parcels available to accommodate the indicated shortage of land generally planned for this acute need. The proposed

project is intended to fulfill the demand for housing wherein median income families (annual income of \$14 - \$17 thousand) can qualify. The proposed price range for the units will be within \$36,750 to \$52,490; median price - \$44,625. This range of prices in today's market is not considered unrealistic. Opponents of the development have indicated that the existing Waialua District community would not be able to meet this annual income requirement in order to purchase units within the proposed development. The developer is attempting to pull together a project meeting the needs of siblings who have left family homes in the Waialua/Haleiwa district due to unavailability of residential units within their income capabilities. The existing "plantation style" housing is adequate for needs of the sugar industry, but the growing population of Oahu and more particularly the younger members of the Waialua District are not being accommodated by the current market supply of housing. As the trend of plantation children leaving both family and the sugar industry to seek their fortunes elsewhere, an attempt to return them to the Waialua District is needed; the replacements for second and third generations leaving plantations are not in a position to purchase units within the indicated price range since these workers, for the most part, are newly arrived and not financially qualified. The developer has indicated a willingness to work and participate with both the Waialua Community Association and Haleiwa Community Association by offering units at Kaiaka Point to those interested members of the Community Associations on a first refusal basis. After exploring this thoroughly, an offer would then be made to

to potential purchasers outside the community. The developer has shown that current land generally planned for residential use in Waialua is inadequate to provide for projected housing needs of this area. The 38-acre proposed development at Kaiaka Point would be a welcomed addition to existing general planned residential areas.

II

A. PROBABLE ENVIRONMENTAL EFFECTS (BOTH ADVERSE AND BENEFICIAL)

Discussion of probable environmental effects will consist of three basic areas:

1. Water Pollution considerations
2. Solid Waste Considerations
3. Air Pollution considerations

1. Water Pollution - At the present time the Waialua-Haleiwa area does not have municipal sewage treatment facilities. The entire area is presently being serviced by individual cesspools. The City & County of Honolulu, Department of Public Works, advises in a memo to the Planning Director, dated June 15, 1972, ". . .other than Unit I of the Waialua Sewage Treatment Plant, no other sewage improvements are scheduled to be constructed in the present Capital Improvement Program (1973-78). Consequently, an interim sewage treatment facility and effluent disposal system may have to be provided by the applicant".

The State of Hawaii and the Federal government are both in a period of transition at the present time with regard to "effluent" and "receiving water" standards. The Department of Health has passed an amendment to Chapter 38, Public Health Regulations, relating to various effluent requirements. The rules specifically apply to treatment works having outlets which:

- a. Discharge into Class 2, Class B, or nearshore Class A waters; and
- b. Are connected to seepage pits or injection wells located on land adjacent to Class AA waters

Basically, the proposed regulations specify a minimum effluent quality that could be attained only through an advanced form or tertiary treatment. Also specified in the proposed amendments to Chapter 38 are outlets:

- c. That discharge into off-shore waters; or
- d. Are connected to an effluent reuse system for irrigation purposes; or
- e. Are connected to seepage pits or injection wells located on lands adjacent to Class 2, Class B, or nearshore Class A waters

The effluent from these outlets, with possible waivers, essentially would require secondary treatment. As approved, Class A waters, such as Kaiaka Bay, could receive without waiver, a treated waste water effluent the quality of which would require tertiary treatment. Furthermore, if injection wells or seepage pits are technically feasible, then secondary treated effluent might be acceptable (depending on the interpretation of Chapter 38 in regard to the word "adjacent", and as applied to Class AA waters). Presently, a potential discharger may apply for a permit to discharge into injection wells or seepage pits. The City & County Board of Water supply must also approve such an action. However, in the case of Kaiaka Point, the underlying waters are not considered potable.^{1,3} The feasibility of utilizing injection wells or seepage pits would have to be determined by test drilling and analysis of a competent geologist or engineer. Although literature on the soils⁶ and geology⁴ of Kaiaka Point indicates that some degree of injection or seepage may be possible, studies conducted nearby

on Waialua Sugar Company property conclude that underground disposal of thermal discharges for hydraulic and geologic reasons are not considered a viable alternative. This conclusion was based on a discharge of 14mgd of condensor cooling water, whereas the full design quantity of flow for the present proposed project is only 0.25 mgd, based on 100 gal/cap/day.

The potential waste water treatment and effluent disposal alternatives available include:

- f. A minimum of secondary treatment and a deep ocean outfall
- g. A minimum of secondary treatment and injection wells or seepage pits
- h. Tertiary treatment and discharge into Kaiaka Bay
- i. A minimum of secondary treatment and effluent reuse for irrigation purposes
- j. Postponement of proposed project until a municipal sewerage system is available.

2. Solid Waste Considerations.

Solid wastes or domestic refuse generated at the rate of 4 lbs/cap/day¹⁸ for the design population of 2,500 people will produce an additional 5 tons of solid waste per day. Although this quantity will tax the existing system, it is fair to assume that there will be some reduction in load on other systems operating on Oahu as the result of shifting population. However, since the Haleiwa-Waialua-Mokuleia system is small, the impact on this system will be significant. Specifically, the present load will be increased by 28%, from 6,500 tons/year¹⁸ to 8,330 tons/year. The net result would be a decrease in the life of the existing landfill disposal site at Kawaihoa from 8 years based on 1970 dumping rates, to 6 years.

3. Air Pollution Considerations.

a. Within the immediate area of the proposed project site, the major existing point sources of air pollution are the open burning of sugar cane fields and the stack discharges of the sugar manufacturing plant. Other sources of air pollution which may be defined as area sources are created by the people of the area including those who work, reside or pass through the area.

Open burning of sugar cane fields prior to harvest is a significant source of air pollution. The overall exposure is minimal, however, since the great distances involved in the transport of oxidation products from Kawaiiloa, Opaclua and Helemano. A highly intense short duration exposure to air pollutants occur during burning of fields adjacent to established residential areas of Haleiwa and Waialua. The Estimates of contribution of air pollution by open field burning in Waialua is as follows.

OPEN BURNING OF CANE FIELDS - WAIALUA (6,000 acres per year, approximate)

<u>POLLUTANTS</u>	<u>POUNDS PER YEAR</u>
Particulate matter	1,350,000
Carbon Monoxide	9,000,000
Hydrocarbon	1,800,000
Nitrogen oxides	180,000
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Total	12,330,000

After the cane is harvested, it must be processed to be converted into the final product. The processing operations require heat and power which is derived from the burning of bagasse and supplementary fuel in boilers for the generation of steam and electricity. The air pollution load contributed from the sugar mill under normal control conditions is delineated on the following page.

SUGAR MILL OPERATIONS - WAIALUA
 Approximate annual fuel consumption:
 150,000 tons of bagasse
 800,000 gallons of fuel oil

Pollutants	Pounds per year	
	Bagasse	Fuel Oil
Particulate matter	3,300,000	18,400
Carbon monoxide	-	160
Hydrocarbons	-	2,400
Nitrogen dioxide	-	64,000
Sulfur oxides	-	25,160
Sub total	3,300,000	110,120
Total (rounded)		3,410,120

The discharge from the mill stack is released at a height favorable for dispersion and dilution; hence, the pollution potential is minimal. Residents located within the transport area of the plume have complained of soot fall that created a nuisance. The Waialua Agricultural Company recently installed a multi-cyclone dust separator to trap the larger soot particles from the mill stack discharge. A major reduction in soot loading can be anticipated as soon as all adjustments are completed.

b. Vehicle pollution. Traffic counts at key locations in Waialua area taken during March 1971 show the following:

Kamehameha Highway at Twin Bridge - 891 cars/day
 Thompson Corner: To Kaena Point -4714 cars/day
 To Wahiawa -4299 cars/day
 To Haleiwa -3407 cars/day

Local Traffic - no data

On the basis of six vehicle miles traveled by each car in the area, the total vehicle miles traveled in a year is 6,082,360 (rounded to 6,000,000 vehicle miles per year). The air pollution emission inventory for vehicular contribution in Waialua-Haleiwa area is as follows:

VEHICLE POLLUTION

<u>Pollutants</u>	<u>Pounds per year</u>
Particulate matter	3,900
Carbon monoxide	1,100,000
Hydrocarbon	140,000
Nitrogen oxides	74,000
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Total	1,317,900

The total emission inventory of major existing sources in the project area is approximately 17,000,000 pounds of pollution per year.

TOTAL POLLUTION - EXISTING SOURCES (in million pounds per year)

Source	Particulate Matter	Carbon Monoxide	Hydro Carbon	Nitrogen Oxide	Sulfur Oxides	Total
Open Burning	1.35	9.0	1.8	.18	-	12.3
Mill Stack	3.32	0.0002	.002	.06	.003	3.4
Vehicle	.004	1.1	.14	.07	-	1.3
Total	4.7	10.1	1.9	.31	.003	17.0

Other sources of air pollution not included in the inventory but should be mentioned are wind blown fugitive dust associated with planting and harvesting operations in the sugar cane fields and the open burning of solid waste refuse by the public.

c. Meteorological Data. - (Sources: National Weather Service, Waialua Agricultural Company)

MICROMETEOROLOGY OF PROPOSED PROJECT SITE AND VICINITY

<u>Meteorological factors</u>	<u>Data</u>
Average annual rainfall (10 year average)	27.84"
Mean number of days rainfall .1 - .5"	50 days
Mean daily maximum temperature	82.0°F
Mean daily minimum temperature	64.5°F
Prevailing direction of wind, January*	ENE-SW
April	NE-S
July	NE-SSE
October	ENE-ESE

*During the winter months NNW winds are moderately frequent. Also during this period the winds from the southerly direction are of greater speeds ranging from 14 to 24 miles per hour. The strong southerly winds are typical of winter storms.

d. Existing Level of Pollution. - There are no available data on the existing level of air pollution in the vicinity of the project site. The Air Sanitation Branch of the Department of Health has not conducted aerometric studies because air pollution potential did not indicate a high priority for a sampling study. Complaint conditions registered to date have been associated to open field burning and stack emission and the control strategies for both of these conditions are being developed.

The emissions of the sugar mill stack have been measured in investigations of complaining conditions and the readings have consistently been on the higher values. In one series of Ringelmann

readings, 100 per cent opacities have been recorded. After the recent installation of multicyclone separators, the opacity readings have improved significantly. However, additional work is necessary to meet Air Pollution Control Regulations, Chapter 43, Section 8, "Visible Emissions on Ringelmann Reading", and Section 12, "Fuel Burning Equipment: Bagasse-Burning Boilers on Particulate Loading". It is expected that the requirements will be met by the December 31, 1973 deadline.

The project site will require minimal preparation for the construction of moderate income housing. Possible sources of air pollution are operations involving driving of piles, installation of utilities, construction of roadways, masonry cutting, cleaning up and other similar operations. The project site is located downwind of Haleiwa School, but wherever possible these operations will be conducted during school vacations or non-school hours. In any event, absolute measures will be taken to comply with existing air quality standards and emission standards of Public Health Regulations Chapters 42 and 43, respectively.

A new area source of pollution will be created with the approval and construction of the housing development. Increase in pollution will come about by the new residents, particularly in their requirements for power and energy. It is to be expected that the automobile population will increase by approximately 1,500 and an increase of 547,500 vehicle miles resulting in the discharge of the following:

NEW SOURCES OF POLLUTION

VEHICLE

<u>Pollutants</u>	<u>Pounds per Year</u>
Particulate matter	353
Carbon monoxide	103,000
Hydrocarbons	13,700
Nitrogen oxides	<u>7,400</u>
Total	124,453

The proposed project will have a limited impact on the environment. The increase is 124,000 pounds per year of pollutants as compared to the existing total of 17,000,000 pounds per year.

III

SUMMARY OF ALTERNATIVE PROJECT SOLUTIONS

The alternatives available for effective utilization of the land on an effective cost benefit ratio to the present owner are limited. As demonstrated in the economic study performed for the developer, the availability of lands presently zoned or general planned for multi-family residential development in the Waialua District are extremely limited. As proposed, the development of the Kaiaka Point site for medium density apartment use would fulfill a need not presently being met.

The other alternative available for this parcel is Park use by the general public. In a letter dated May 11, 1973 (Appendix A) to the Waialua Community Association, the Chairman of the Department of Land & Natural Resources stated:

" .I am advised by our Parks Division that the Kaiaka shoreline is not suitable for swimming or diving and that it is not generally used for boating, fishing, or surfing. In sum, it is not regarded as a prime Park area and would chiefly be of local value to the Waialua Community. By contrast, the adjoining Waialua Bay area is regarded as having potential for island-wide needs.

"If we are correct in our present assessment, there appears to be no compelling reason to develop the entire 53 acres to park."

In a memo dated February 22, 1973 (Appendix B) to the Planning Director, City & County of Honolulu, the Director of the City & County Department of Recreation states:

"It is the Department's desire to maintain the subject property for park use. However, due to the City's budget limitations and many widespread pressing projects, we are unable to immediately program funds necessary for the acquisition of these lands for park use. As an alternative, we have coordinated with the applicant to develop park areas to serve the needs of the Haleiwa District."

The Waialua District has 12,406 acres of open space for park use designated under the General Plan which will satisfy a population of 12,492 in 1985 and will be approximately 100 acres per person. The subject land is 0.004% of the total open space designated in this vicinity. The General Plan indicates a total of approximately 10 miles of beachfront parks in the vicinity. The subject property is 0.26% of the total ocean park frontage, but only a very small part of that frontage is suitable for beach park because the water is not suitable for swimming due to mud and silt from the Paukauila Stream.

The developer is proposing to dedicate 15 acres of the total 53 acres for public park use to be administered under the Department of Recreation, City & County of Honolulu. These 15 acres include the only sand beach on the subject property, the rocky point which is utilized by surf casters, and the total area encompassing the large grove of ironwood trees.

In summary, the alternative use of park use is being accomplished in the developer's proposal as part of a compatible mixed use concept. If the draft ordinance currently under consideration by the City & County were in force, the 15 acres dedicated to general park use would exceed the requirements of the ordinance in a significant manner.

IV

COMPARISON OF ALTERNATIVES WITH SELECTION OF PROPOSED PROJECT

The comparison of alternatives with the selection of the proposed project ranges from:

1. Retain in present use
2. Dedicate to park use
3. Variations of residential development
 - a. 1600 units - high rise apartment buildings
 - b. 1100 units with portions of the site dedicated to park use
 - c. 756 units in medium rise apartment buildings
 - d. Conventional subdivision - 305 fee simple lots

Examination of these alternatives reveal that the developer purchased the land with intent to develop a compatible plan which could effectively meet the needs for housing units and still maintain the character of the project site.

The first two variations of the residential development concept would not meet these compatible mixed use formats and have been abandoned. Opposition to these proposed project schedules were formidable and consistent with the attitudes of the community. Variation (d) is not considered economically feasible since site development costs can be prohibitive and the goals of the developer to provide reasonably priced residential units would not be met.

Comment should be made to the first two alternatives of retention of the project site in its present use and also the opportunity for dedication to park use. As presently determined, the ownership of the project site precludes the uses for park or

open space since the funds required to purchase the project site from the present owner are not available from the government agencies who would normally be the stewards of this project site as a park. The condemnation of the site could be considered but the long litigation would prove to be of no real benefit to either the present owner or the governmental agency involved.

V

EXTENT OF PUBLIC PARTICIPATION

To date, there have been no formal hearings conducted by governmental agencies; however there have been meetings scheduled and held by the Haleiwa and Waialua Community Associations to determine the attitudes of the community towards implementation of this development. The prevailing attitude by the Waialua Community Association towards this project must be considered negative since the urge to preserve the total site for park use for local community members has been the key message provided to the association. The Haleiwa Community Association has recently been formed to administer the needs of the District. This group has not expressed itself as negative to the proposed development and has established a system to take care of problems existing within the District.

VI

OTHER PERMITS REQUIRED

STATE: Department of Health (Environmental Health Division)
Department of Education

COUNTY: Department of Public Works (Sewers Division, Refuse
Division, Drainage Division)
Building Department
Traffic Department
Police Department
Board of Water Supply
Department of Parks & Recreation
Fire Department

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15. Data obtained from the Department of Health, State of Hawaii, May 1973.
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17. Flack, William D., written correspondence to Mr. Robert R. Way, Planning Director, City and County of Honolulu, June 19, 1972
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TABLE I
CHARACTERISTICS OF SOILS OCCURRING AT KAIKA POINT

<u>Characteristic</u>	<u>Soil Type</u>			
	<u>EmA</u>	<u>JaC</u>	<u>Ms</u>	<u>WkA</u>
Permeability	Moderate	Rapid	Moderate to Rapid	Moderate
Available Water Capacity, inch/inch of soil	0.1-0.12	0.005-0.007	0.06-0.16	0.13-0.15
Runoff	Slow	Very slow to slow	Slow	Slow
Erosion Hazard	Slight	Severe wind erosion when defoliated	Slight	Slight
Corrosivity	Low	Low	Low to Moderate	Moderate to Low
Depth to Bedrock, ft	5	5	5	5
Mean Annual Soil Temp., °F	73	75	74	73
Uses	Sugar cane Truck crops Pasture	Sugar cane Truck crops Pasture Urban Development	Sugar cane Truck crops Pasture	Sugar cane Truck crops Pasture

- (1) Refer to Table I, Appendix A
- (2) Refer to Table II, Appendix A
- (3) Refer to Table III, Appendix A
- (4) Refer to Table IV, Appendix A

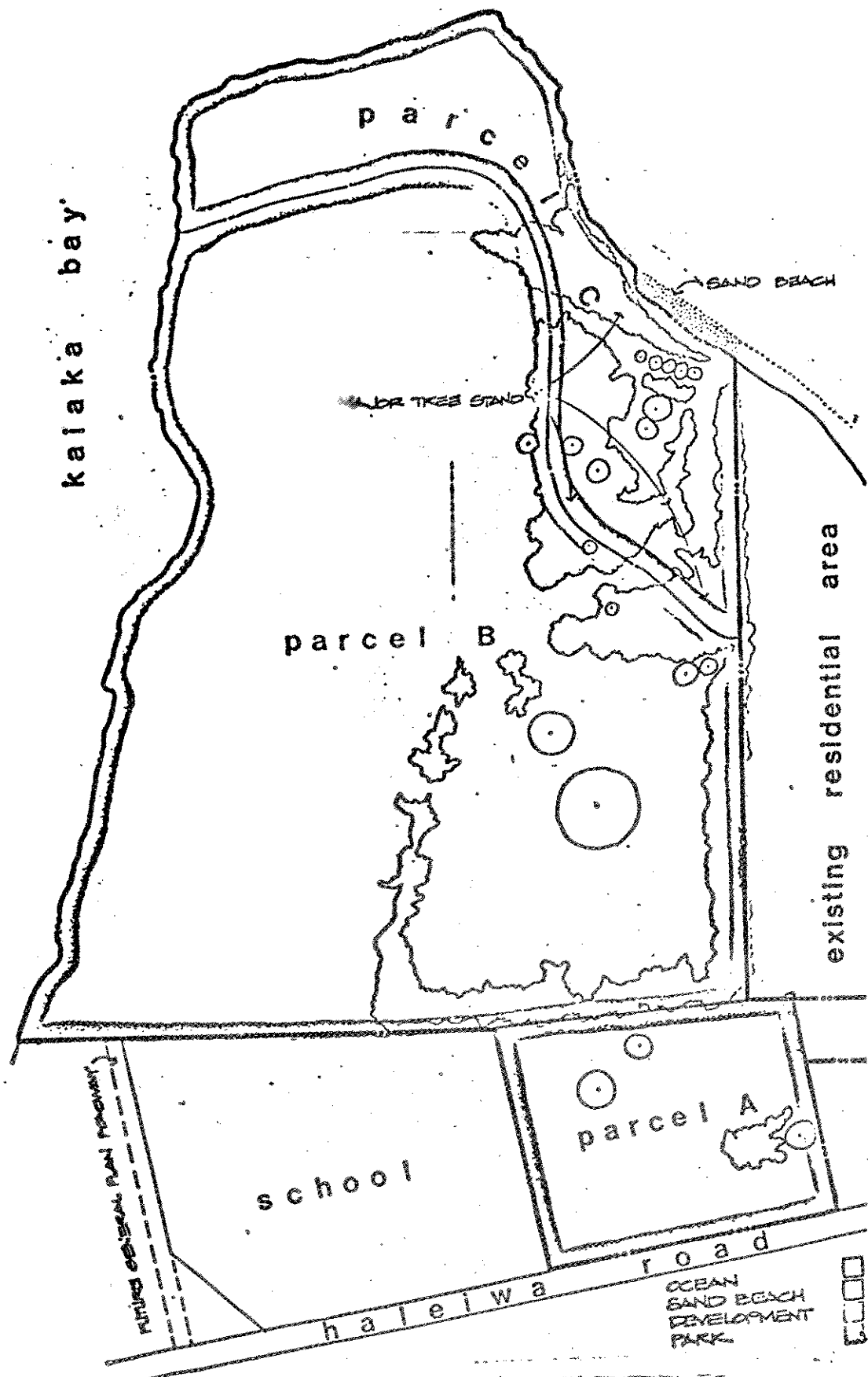


Figure 1 Site Map of Proposed Project at Kaiaka Point, Oahu

Oahu HYDR

023037

ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED DATE 07-18-2009 BY 60322 UCBAW

SHIRAZI, S. 1979. The effects of the 1978-79 drought on the population of the common carp (*Cyprinus carpio*) in the Tigris River, Iraq. *Journal of Fish Biology* 14: 1-10.

CASPOCA, Camerata di Casale, ensemble ad-hoc.

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1903441. Used in oil and gas field, to improve

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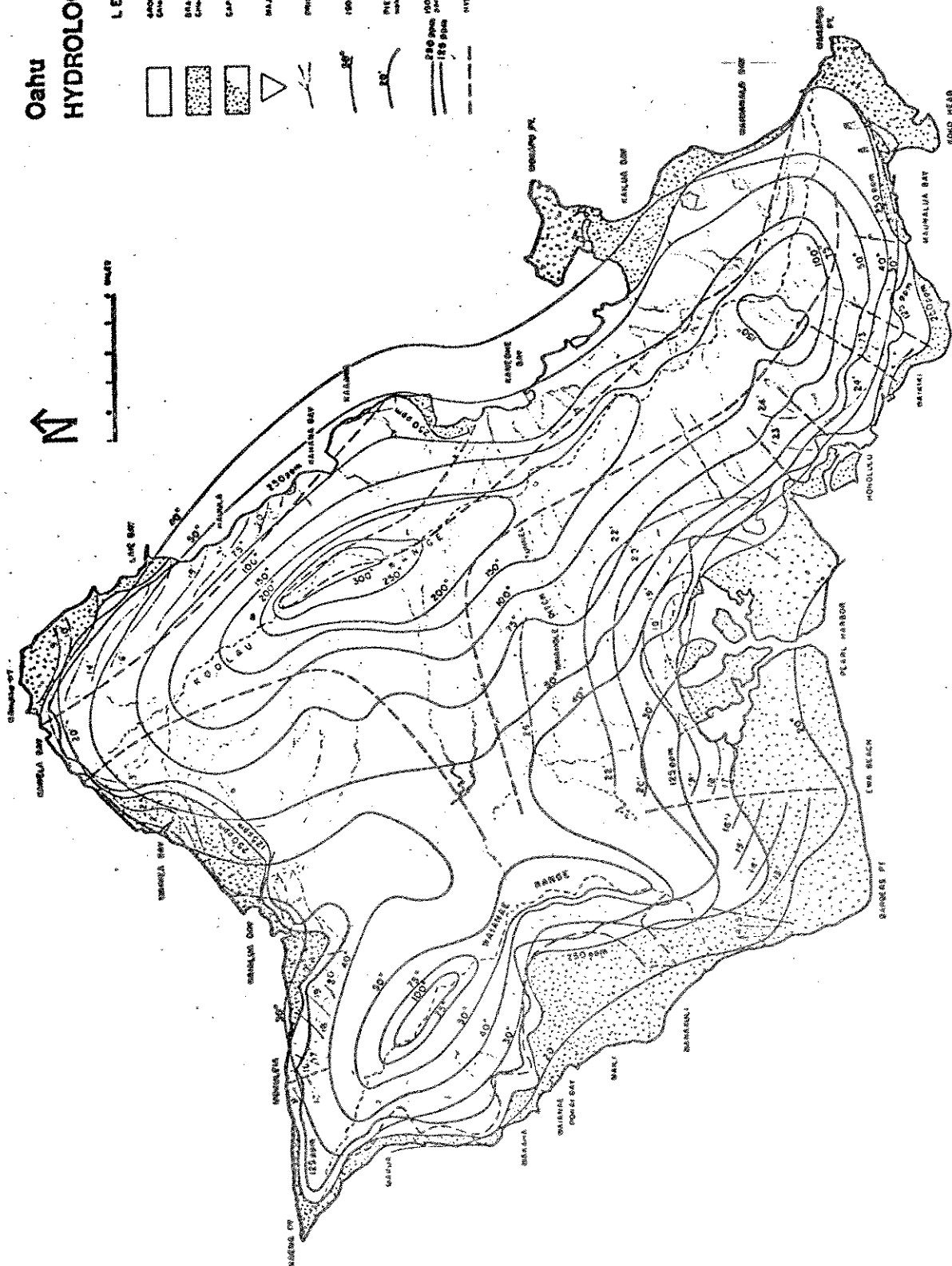
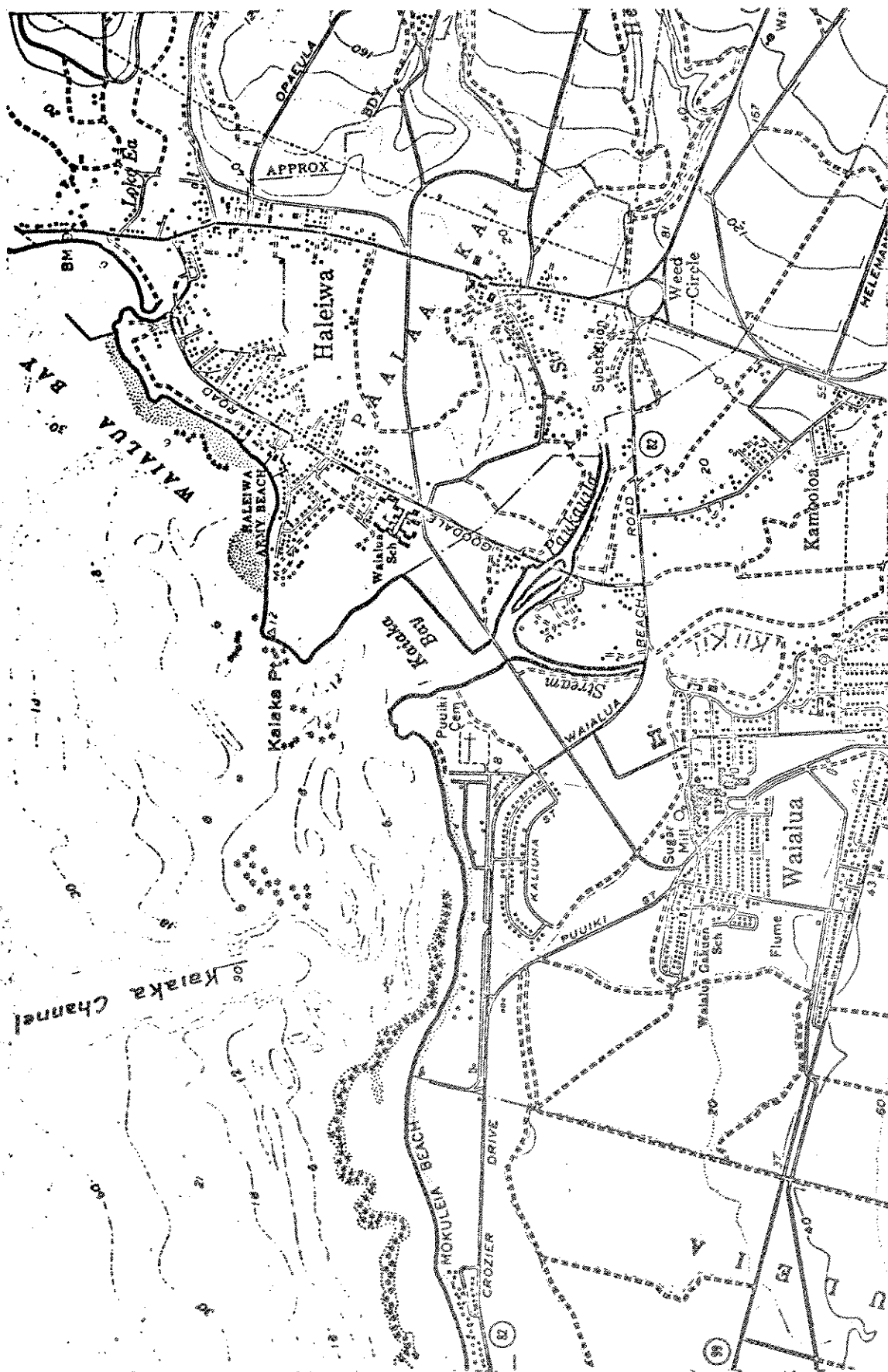
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Figure 2 Hydrologic and Geologic Characteristics of Oahu
(from "2020 Plan" Board of Water Supply, City and County of Honolulu, pg 13, February 1971.)



May 11, 1973

Mr. Frederick C. Gross
Waialua Community Association
P. O. Box 604
Waialua, Hawaii 96791

Dear Mr. Gross:

On May 1, 1973, the City Planning Department referred to us the proposal by Oceanview Ventures to amend the Kaiaka Point area of the Oahu General Plan. Inexplicably, we made no reply at that time although it is our habit to do so.

Our understanding is that Oceanview has revised its original proposal and now seeks to put the 53 acres of Kaiaka Point into Apartment (38 acres) and Park (15 acres) uses. The Apartment Use is to accommodate approximately 756 units instead of the 1500 units originally proposed.

I am advised by our Parks Division that the Kaiaka shoreline is not suitable for swimming or diving; and that it is not generally used for boating, fishing, and surfing. In sum, it is not regarded as a prime park area and would chiefly be of local value to the Waialua Community. By contrast, the adjoining Waialua Bay area is regarded as having potential for island-wide needs.

If we are correct in our present assessment, there appears to be no compelling reason to develop the entire 53 acres to park.

Mr. Frederick C. Gross

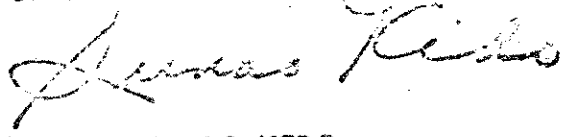
-2-

May 11, 1973

We are however, concerned that development plans do not explicitly indicate public access to the Park area and that the Waialua Community may not be made to feel welcome. If Oceanview feels the park should be exclusive, then we believe that additional open space should be provided the apartment dwellers in order to fill the need for exclusiveness.

Very truly yours,

BOARD OF LAND AND NATURAL RESOURCES



SUNAO KIDO
Chairman and Member

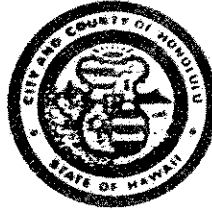
cc: C&C Planning Department

bcc: State Parks
GS:ts

P2/73-870 11

DEPARTMENT OF RECREATION
CITY AND COUNTY OF HONOLULU

1455 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96814



FRANK F. FASI
MAYOR

PAUL DEVENS
MANAGING DIRECTOR

YOUNG SUK KO
DIRECTOR

HAMON DURAN
DEPUTY DIRECTOR

February 22, 1973

Mr. Robert R. Way
Planning Director
City and County of Honolulu
Honolulu, Hawaii

Dear Mr. Way:

SUBJECT: KAIKA BAY DEVELOPMENT--HALEIWA
PROJECT REFERENCE NO. 199/C1/28

We have reviewed the application to amend the General Plan and make the following comments and recommendations:

It is the Department of Recreation's desire to maintain the subject property for park use. However, due to the City's budget limitation and many widespread pressing projects, we are unable to immediately program funds necessary for the acquisition of these lands for park use.

As an alternative, we have coordinated with the applicant to develop park areas to serve the needs of the Haleiwa district. An agreement was made on the park areas which the applicant plans to dedicate to the City. Therefore, we will not object to the proposed DLUM change.

We would like to recommend that the roadway easement through the park be readjusted, as shown on the attached map. This will enable the Department to develop an effective public park that will serve the proposed project, Haleiwa School, and the existing Haleiwa community.

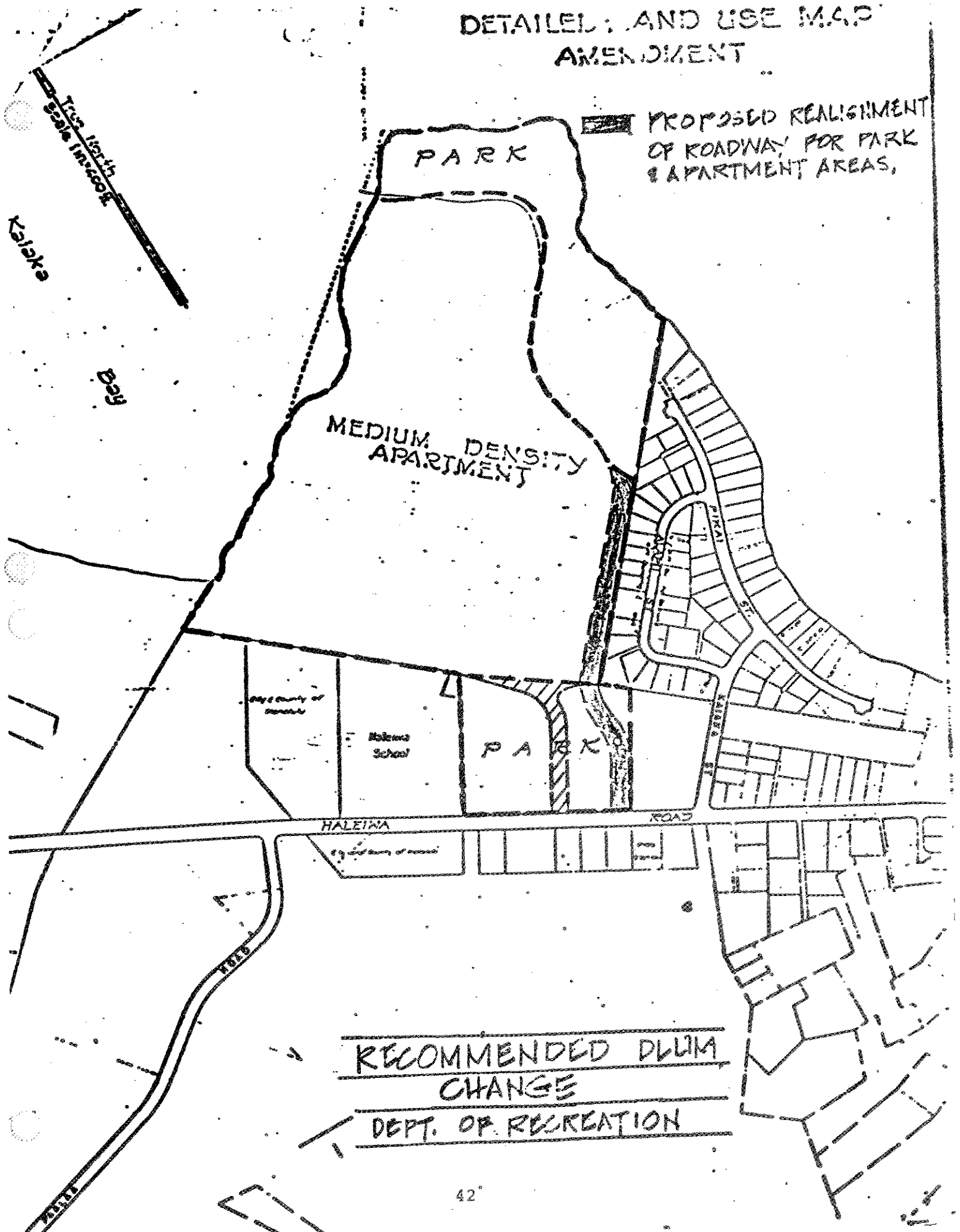
Sincerely,

Young Suk Ko
YOUNG SUK KO, DIRECTOR

Attach.

RECEIVED
73 FEB 23 AM 11:44
PLANNING DEPARTMENT
CITY AND COUNTY
OF HONOLULU

DETAILED LAND USE MAP AMENDMENT





Aerial View of Project Site - KAIKA POINT